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54 Detection label for an anti-shop-lifting system.

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Description

This invention relates to a detection label for an anti-shop-lifting system, comprising a housing accommodating an electrical circuit which by means of an electromagnetic interrogation field can be detected, a needle by means of which the detection label can be secured to an article to be safeguarded, and locking means for locking the needle.

Such detection labels, sometimes referred to as wafers or responders or transponders, are known in practice in various embodiments. One example of a known label is described in British patent specification 1 570 508 (Nedap). In the prior labels, the housing is provided with a lock in which the shank of the needle or spike can be locked. The head of the needle or spike is secured in the free end of a flexible arm, the other end of which is secured to the housing. The needle or spike is to be inserted into the lock through an aperture in the article to be safeguarded, or in the case of textile, through the fabric of the article. The lock can in most cases be unlocked magnetically.

The electrical circuit of the prior labels for anti-shop-lifting systems comprises a tuned circuit which comes into the resonant state in an interrogation field. The signal generated by the tuned resonant circuit can be detected with a receiver. Often, however, the energy absorbed by the circuit of the label is detected at the end of the transmitter which generates the interrogation field. The label according to the invention is suitable for both types of systems.

In practice, inserting the needle and fixing it turns out to be a cumbersome operation, because the positioning of the needle in the opening provided in the label for the purpose requires some degree of accuracy, for which coordinated manipulation by both hands is needed.

Another drawback of the prior labels is that an alarm signal is only generated when the label is introduced into the interrogation field of the transmitter/receiver. Fraudulent attempts at removing the label from clothing without the appropriate uncoupling equipment, however, cannot be detected.

It is an object of the present invention to provide a label which does not have the drawbacks outlined above, and to which various security functions can be added in modular form. For that purpose a label is provided which has a fixed clip and an integrated needle, whereby the attachment of the label to an article is considerably simplified. The movement of the needle is guided by the structure, so that the label can be simply attached with one single hand movement. In the attached condition, the article to be protected, for example, a piece of clothing, is secured between the fixed clip and the label housing by means of the needle. In order that an alarm signal may be generated when the label is subjected to fraudulent manipulations a source of power is needed. If this power source

is a battery, it must be possible for it to be removed and replaced when it is exhausted. However, the removal of the power source by unauthorized persons must be impossible, because in this way the label might become deactivated, at least as far as the fraud alarm is concerned.

British patent application 2 180 680 discloses an anti-shoplifting system which comprises a plurality of safety clips, each comprising a housing accommodating an active portion which, in operation, is energized by a supply voltage and is capable of generating an alarm signal.

These known safety clips cannot be detected through an electromagnetic interrogation field by wireless means, because these clips do not comprise an electrical responder circuit. In the known system the safety clips must all be physically connected by means of a cable to a fixed central device, which is undesirable.

According to the present invention a detection label for an anti-shop-lifting system, comprising a housing accommodating an electrical circuit, a needle, by means of which the detection label can be secured to an article to be safeguarded, and locking means for locking the needle wherein the housing comprises a fixed clip which together with the rest of the housing encloses a slit-like free space and includes a cavity for receiving the tip of the needle; and the needle is placed within the housing together with operating means for moving the needle towards the clip is characterized in that the housing further comprises guiding means for guiding the needle during its movement to the clip and that the operating means comprise a push button connected to the head of the needle, and that the guiding means include a fabric clamping device resiliently coupled to the push button and having a bore therein, into which the shank of the needle extends, the electrical circuit being for detection by an electromagnetic interrogation field.

As the needle is operated by a push button it is possible to use a hollow push button in which one or more batteries can be mounted. By adding to the basic structure of the label according to the invention a power source and a suitable electronic circuit, it is possible to generate an active alarm signal when the label is being tampered with. Signalling that the label is being tampered with can be considerably simplified when, in the locked position, the needle is biased into contact with the clip by springs means. In that case when the needle is cut or the clip broken, the needle is pushed further outwardly, which can be utilized to close an electrical contact. In this way an alarm signal can be obtained which in the non-active condition is currentless and so does not consume energy, so that an optimum service life of the batteries is ensured. It is also possible for a label according to the invention to be equipped, for example, with a piezoelectric buzzer or bleeper, which sounds a prolonged signal,

which has a preventive effect. As it is not possible for a label to be secured to all types of goods to be safeguarded in the above-described manner, it is possible, according to the present invention, to use an accessory in the form of a cord or cable or the like. The cord or the cable etc. is inserted through an opening of the article to be safeguarded, and the ends of the cord are connected together and locked by means of the label according to the invention. In the label in the latter embodiment, the cord or the cable etc. may consist of steel wire which is difficult to cut through, with an eye at each end, through which the needle of the label can be inserted. In the embodiment in which a "tamper alarm" can be generated, this alarm function can also be operated, in accordance with this invention, through a specially constructed cord.

It is noted that European patent application 0 266 294 describes a U-shaped safety clip for shop articles, comprising a needle which can be stuck through a piece of clothing and fixed in that position by means of a lock operable by a key. That safety clip is not provided with means for wireless detection either, but, like the clip described in the British patent 2 180 680, can only be used in one particular place, because the clip is provided with a cable inserted through a fixed eye in the shop.

Some embodiments of the invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings. In said drawings,

Fig. 1 is a vertical cross-sectional view taken on the line I-I of Fig. 2, and showing one embodiment of a detection label according to this invention; Fig. 2 shows a cross-sectional view taken on the line II-II of Fig. 2;

Fig. 3 shows an example of an accessory with a cord for use with a detection label according to the invention;

Fig. 4 is a side-elevational view, showing a different embodiment of the detection label according to the invention in the inoperative position;

Fig. 5 shows the detection label of Fig. 4 in the operative position;

Fig. 6 is a vertical cross-sectional view, showing a variant of the detection label of Figs. 1 and 2;

Fig. 7 is a cross-sectional view taken on the line VII-VII of Fig. 6;

Fig. 8 is a cross-sectional view taken on the line VIII-VIII of Figs. 6 and 7;

Fig. 9 is a cross-sectional view of the detection label of Figs. 6-8 in the operative condition; and Fig. 10 shows the detection label of Figs. 6-9 in cooperation with an accessory provided with a cord.

Fig. 1 shows diagrammatically a cross-sectional view of a wafer or detection label according to the present invention, in which a needle or spike of the wafer is fully within and between a wafer housing 2

and a clip 3, in both the open and the closed position. In the open position, the needle is entirely within the wafer housing 2. Fabric of a piece of clothing can be slipped between the clip 3 and the housing 2. At the bottom of the housing, as viewed in the drawing, there is provided a push button 4 which in the open position projects from the housing. Needle 1 is at the top of push button 4, and is surrounded by a helical spring 5. The shank of the needle or spike points to a cavity 7 in clip 3. In the open position of the wafer, the needle or spike is within a guide bore 20 in the wafer housing, through which it extends in the open position of the wafer. In the embodiment shown, the guide bore is provided in a device 6 which can move towards and away from clip 3, and has a fabric clamping function. It is thus prevented that the wafer is suspended exclusively by the needle, which could damage the fabric. In the closed position of the wafer, spring 5 exerts a force on fabric clamping device 6. When push button 4 is pushed into housing 2, the tip of needle 1 is stuck through an article to be safeguarded, such as a piece of clothing, into the cavity 7 of clip 3. In the closed condition, push button 4 is fully sunk within wafer housing 2. Spring 5 is tensioned through this operation, so that the fabric of the piece of clothing or other article is clamped between clip 3 and fabric clamp 6.

Fig. 2 shows a cross-section perpendicular to the section of Fig. 1, and shows the wafer in the closed position. At the end of push button 4 facing the clip, one or more projections 8 are provided. When push button 4 is depressed, catches 9 catch behind projection 8. In this situation, push button 4 cannot fall back into its old position, and the wafer is locked. In the example shown, the catches take the form of leaf spring catches. The wafer is removed by means of an uncoupling apparatus specially constructed for the purpose. Through one or more magnets, the leaf spring catches 9 are drawn into a position in which projections 8 are released, so that push button 4 and hence the needle can be moved to the outside and the wafer removed from the object being safeguarded. The uncoupling apparatus may, for example, comprise an annular magnet, shown diagrammatically at 27 in Fig. 1, which is capable of attracting the curved sections 9a of catches 9, to cause the catches to pivot outwardly relatively to intermediate pieces 28 connected to them, and also connected to print 21, to release push button 4. In this example the intermediate pieces 28 also serve as contact strips.

The above-described basic construction of the wafer can be extended with an active alarm function. In that case, as shown in the cross-section of Fig. 1, additional components are added. In push button 4, one or more batteries 12 are provided, together with two resilient contact lips 10 and 11 (Fig. 2). The leaf spring catches 9 in Fig. 2 are mounted either direct or through intermediate pieces 28, on a print 21, i.e., a

wafer carrying an electronic circuit capable of generating an active alarm in the form of a bleep and/or a radio-frequency alarm signal, which is transmitted to a coil not shown and can be received, for example, by receivers mounted in the ceiling. Advantageously, the coil may be the coil of the conventional wafer circuit, which is present anyway. As shown in Fig. 2, the push button 4 is constructed so that, in the closed position of the wafer, battery 12 is pushed downwardly through needle 1 against the spring action of contact lip 11, so that the electrical connection between lip 10 and the battery is broken. In this situation no voltage is passed through the contact lips and the leaf spring catches to the print.

When the needle 1 can move further outwardly, for example, because it is cut, or the clip 3 is broken, then, under the influence of the spring pressure of lip 11, the battery will be pushed against contact lip 10, as a result of which supply voltage is passed to the electronic circuit on the print, and an alarm is generated. The electronic circuit may, for example, be an oscillator circuit. The wafer may also comprise a buzzer or the like to be energized by the batteries.

Fig. 3 shows a cord, to which the alarm function can be transmitted, if it has been added to the wafer. For this purpose, the contact lip 10, as shown in Fig. 2, is arranged to make electrical contact with spring 5. Furthermore, at the top of fabric clamping device 6, a metal strip 13 is provided, which is also in electrical contact with spring 5.

The cord shown by way of example in Fig. 3 comprises a flexible tubular guide element, e.g. a closely-wound coiled metal spring 14, possibly provided with a plastic sheath, with a metal wire or cable 15 as a core. Metal wire 15 is fixed at one end of the cord to the metal spring 14, for example, through a weld or by being attached to an end member 25. The other end of the cord is provided with a hollow disk-shaped accessory of insulating material, with the wire or cable 15 extending into the cavity 23 of accessory 22 through a radial bore 24. The end of wire or cable 15 in cavity 23 is provided with a cone or bead 19, and a helical spring 16, which tends to pull the bead, and hence wire 15, from the tube 14.

Accessory 22 comprises a contact lip 17 and a slot 18 forming a kind of fork in which a corresponding end piece 25 at the free end of the cord can be placed. If now the cord is inserted through an opening of the object to be safeguarded, and closed through slot 18, the wafer or label can be provided around the plastic part of the cord by shifting the clip of the label around it and inserting the needle of the label through the accessory, which is provided with a bore 26 for the purpose, and locking it. In this situation, lip 17 makes contact with metal strip 13 in the fabric clamping device. When the cord is now cut or broken, the bead 15 will be pushed into contact with needle 1 of the wafer under the influence of spring 16. In this way, voltage

is passed through the print, whereby an alarm is generated, because the head of the needle is in contact with one pole of the battery or batteries.

It is noted that, instead of the resilient contact lip 11, or in combination therewith, a compressive spring may be used between battery or batteries 12 and the end wall of push button 4. Also, it is not necessary for wire 15 to be made of metal. No more is it necessary for tube 14 to be made of metal.

Fig. 4 and 5 show diagrammatically, and in side-elevational view, an embodiment of a detection label according to the invention with a frustoconical housing 30. At the truncated top of the housing, a push button 31 is provided, which is shown in Fig. 4 in the inoperative position, in which it projects from the housing. The push button serves to operate the needle, not visible in Figs. 4 and 5, in the manner described hereinbefore, in order to move it to the free end of the fixed clip 32 located opposite the base of the conical housing. In the situation shown in Fig. 5, the push button has been depressed and the needle extends into the cavity in the clip. The needle is not visible, however, because the fabric clamping device 33 has also been moved towards the clip in the manner described hereinbefore.

Push button 31 and housing 30 are designed so that the housing can be gripped by one hand and the push button operated with the same hand to push the needle through an opening in an article to be safeguarded or through the fabric of an article to be safeguarded. In the depressed position, the push button is preferably inaccessible from the outside, as shown in Fig. 5. Attempts at detaching or de-activating the detection label in an unauthorized manner are thus made more difficult.

Batteries placed in the push button can only be removed in the inoperative position, i.e., the non-depressed condition of the push button.

Clip 32 is connected to the rest of the housing through a connecting piece 34. In the embodiment shown, the connecting piece is provided with slots 35, which augment the audibility of an alarm buzzer or the like, if provided in the label.

Figs. 6 to 10 show various sections of an embodiment of a detection label according to the invention. Corresponding parts are designated by the same reference numerals as used in Figs. 1 and 2.

As in Figs. 1 and 2, push button 4 is hollow, so that one or more batteries can be placed in it. For this purpose, for example, the push button may be provided with a cap which is detachable when the push button is in the operative position (Fig. 6). The batteries are pushed towards the head of needle 1 by a first contact spring 40 (Fig. 8). At the end of the needle head, there is further provided a second contact spring 41 (Fig. 8). In this example, the contact springs are continuously in contact with both the battery or batteries and the circuit on print 21, in contrast to the

embodiment illustrated in Figs. 1 and 2.

The detection label of Figs. 6-10 is accordingly arranged to detect the breaking of a connection and to generate an alarm signal in response thereto. Figs. 6-8 show at 42 the coil of the passive circuit of the wafer. This coil may advantageously form part of the active alarm circuit of the wafer serving to generate an alarm signal when the wafer is being tampered with. Furthermore, a buzzer is shown at 43, which can be energized by the active alarm circuit. Other means capable of providing an acoustic alarm signal, such as a piezoelectric bleeper, for example, are also applicable.

Fig. 6 shows the detection label in the inoperative condition. In that condition needle 1 is fully within fabric clamping device 6 surrounding the push button. Fabric clamp 6 has a slot through which a lip 44 of a locking pawl 45 extends into the space within the fabric clamp. Pawl 25 is biased by a compression spring 46, and is capable to pivot against the action of spring 46, as shown by broken lines in Fig. 9. Figs. 9 and 10 show the wafer in the operative condition. Push button 4 has been depressed, and lip 44 of pawl 45 is behind the shoulder 8 of the push button and thus prevents the push button from moving outwards again. Pawl 45 can be unlocked magnetically in known manner when the wafer is placed in an unlocking device provided for the purpose.

Fig. 9 shows the detection label in the condition in which thick material is clamped between clip 3 and fabric clamping device 6. The broken lines indicate the position of the fabric clamp if no material, or very thin material has been placed between the fabric clamp and the clip.

As shown in Fig. 9, a contact spring 47 is provided in clip 3 which in the operative condition of the wafer makes contact with needle 1 and, through the needle, with one pawl of the battery (batteries) 12. Contact spring 47 is accommodated in cavity 7 of the clip, but in this example, for reasons to be described hereinafter, also extends below an aperture 48 in clip 3 opening towards the fabric clamp.

Through a wire 49 (Fig. 7), the contact spring is further connected to the electrical circuit of the wafer. If it is tried to pry loose the detection label, or to cut the needle or the like, the circuit of the battery through the needle, the contact spring and wire 49 to the electrical circuit is at least temporarily broken. The electrical circuit is arranged to generate an alarm signal in that case, for example, by energizing an acoustic device 43 and/or transmitting a radio-frequency signal.

In this embodiment, too, an accessory with a cord can be used to safeguard articles which cannot be secured with a needle. Such an accessory is shown at 50 in Fig. 10. The accessory shown again has an opening for receiving the tip of needle 1. Located behind the opening is a contact lip 51 connected to con-

ductor 52 of an electrical cord 53, which is at one end fixedly connected to the accessory. The contact lip is clear of the contact spring. The other end of the electrical cord is provided with a second contact lip 54, which is also connected to conductor 52, and can be hooked into a cavity of the accessory. The second contact lip 54 is shaped so that, if the accessory is placed in the wafer, lip 54 makes contact with contact spring 47 through the opening 48 in the clip. In this way, a closed circuit is again formed through the needle, the first contact lip 51, the cord, the second contact lip 54, the contact spring 47 in the clip and wire 49, which circuit is interrupted when the cord is severed or pulled loose. Such an interruption leads again to an alarm signal being generated.

A detection label or wafer according to the invention can advantageously be designed so that the use of the passive form, i.e., that without a battery or batteries, and the active form in one and the same anti-shop-lifting system is possible. Passive wafers, which may be of the known type, but also of the type according to the present invention with a fixed clip, are then for example used for normal articles, and the active wafers for more expensive articles.

It is noted that, after reading the above, various modifications will readily occur to those skilled in the art. Thus, for example, it is possible to have both the passive and the active wafers generate a coded signal when activated by an interrogation field and/or by fraudulent operations. The code may be related, for example, to the nature of the article being safeguarded. One example of an electrical circuit suitable for this purpose is described in Netherlands patent 176 404. These and similar modifications are considered to fall within the scope of the present invention.

Claims

1. A detection label for an anti-shop-lifting system, comprising a housing (2) accommodating an electrical circuit (21), a needle (1), by means of which the detection label can be secured to an article to be safeguarded, and locking means (9;45) for locking the needle (1) wherein the housing (2) comprises a fixed clip (3) which together with the rest of the housing (2) encloses a slit-like free space and includes a cavity (7) for receiving the tip of the needle (1); and the needle (1) is placed within the housing together with operating means for moving the needle (1) towards the clip (3); characterized in that the housing (2) further comprises guiding means (6) for guiding the needle (1) during its movement to the clip (3) and that the operating means comprise a push button (4) connected to the head of the needle (1), and that the guiding means include a fabric clamping device (6) resiliently coupled to the push button (4) and

having a bore (20) therein, into which the shank of the needle (1) extends, the electrical circuit (21) being for detection by an electromagnetic interrogation field.

2. A detection label as claimed in claim 1, characterized in that the locking means (9; 45) comprise at least one catch (9; 45) which, if the needle (1) has moved to the clip (3), catches behind a shoulder (8) of the operating means and locks the same.

3. A detection label as claimed in claim 2, characterized in that said at least one catch (9; 45) is unlockable by magnetic means.

4. A detection label as claimed in any one of the preceding claims, characterized in that the electrical circuit (21) comprises an active portion which, in operation, is energized by a supply voltage and is capable of generating an alarm signal.

5. A detection label as claimed in any one of claims 1-4, characterized in that the push button (4) is hollow and is capable of accommodating at least one battery (12) between two contact springs (10, 11; 40, 41) extending into the push button (4).

6. A detection label as claimed in claim 5, characterized in that, in the locked position of the locking means (9; 45), the contact spring (10, 11; 40, 41) are electrically connected to the electrical circuit (21) through pawls forming part of the locking means (9; 45).

7. A detection label as claimed in claim 6, characterized in that, in the locked position of the needle (1), the needle head pushes against the at least one battery (12), and keeps the same clear of at least one of the contact springs (10, 11; 40, 41).

8. A detection label as claimed in claim 7, characterized in that said one contact spring (10, 11; 40, 41) is connected through a compression spring (5) placed between the push button (4) and the fabric clamp (6) with a contact strip (13) provided on said fabric clamp.

9. A detection label as claimed in claim 8, characterized by an accessory (22) provided with an attachment cord (14, 15), which accessory can be placed between the fabric clamping device (6) and the clip (3), and includes a bore (26) to receive the needle (1), said accessory (22) being fixedly connected to one end of the cord (14, 15) and detachably connected to the other end of the cord, the cord including a core (15) housed in a flexible tubular member (14), said core (15) ex-

tending at one end of the cord into a central space (23) in the accessory (22), and at the other end of the cord being fixedly connected to said tubular member, the end of the cord extending into the central space of the accessory being provided with a metallic thickening (19) biased by a spring (16) towards the needle (1), but normally unable to reach said needle (1), the spring (16) being in contact with a contact strip (17) having a portion corresponding to the contact strip (13) provided on the fabric clamping device (6).

10. A detection label as claimed in claim 5, characterized in that the contact springs (10, 11; 40, 41) are electrically connected to the electrical circuit (21), that the head of the needle (1) is in contact with one pole of said at least one battery (12), and that an additional contact spring (47) is provided in the cavity (7) for receiving the needle (1) in the clip (3), said contact spring (47) in the locked condition, being in contact with the needle (1) and being electrically connected to the electrical circuit (21), said electrical circuit being arranged so that when the contact between the needle (1) and the additional contact spring (47) is broken an alarm signal is generated.

11. A detection label as claimed in claim 10, characterized by an accessory (22) provided with an attachment cord (14, 15), said accessory (22) having a cavity (23) therein for receiving the tip of the needle (1), and being adapted to be inserted between the fabric clamping device (6) and the clip (3), said cord (14, 15) comprising a conductor (15) having at one end a contact lip (19) extending into the cavity (23) of the accessory, and at the other end a contact lip (25) which can be hooked into the accessory (22) and, in the locked condition, makes contact with the additional contact spring (17).

12. A detection label as claimed in any of the preceding claims, characterized in that the electrical circuit (21) comprises a code generator for generating a coded signal.

13. A detection label as claimed in any of the preceding claims 5-13, characterized in that the electrical circuit (21) comprises a transmission section capable of transmitting a radiographic alarm signal.

14. A detection label as claimed in any of the preceding claims, characterized by an acoustic alarm generator disposed within the housing (2).

15. A detection label as claimed in claim 14, characterized in that the housing (2) is provided with

openings (35) in the vicinity of the acoustic alarm generator (43).

16. A detection label as claimed in any of the preceding claims, characterized in that the housing (2) is of frustoconical shape, that a push button (4) is placed in the truncated top of the conical shape, which push button (4) in the depressed position is fully sunk within the housing, and that the free end of a fixed clip (3) is located in opposition to the base of the conical shape, which clip (3) is connected to an edge portion of the conical shape through a broadened intermediate piece (34).

17. A detection label as claimed in claim 16, characterized in that the intermediate piece (35) can accommodate an acoustic alarm generator (34).

Patentansprüche

1. Erkennungsmarke für ein Ladendiebstahlsicherungssystem, mit einem eine elektrische Schaltung (21) aufnehmenden Gehäuse (2), einer Nadel (1), mit der die Erkennungsmarke an einem zu schützenden Artikel gesichert werden kann, und einer Verriegelungseinrichtung (9;45) zum Verriegeln der Nadel (1), wobei das Gehäuse (2) einen fixierten Clip (3) aufweist, der zusammen mit dem Rest des Gehäuses (2) einen schlitzartigen Freiraum umschließt und einen Hohlraum (7) zur Aufnahme der Spitze der Nadel (1) aufweist; und die Nadel (1) zusammen mit einer Betätigungseinrichtung zum Bewegen der Nadel (1) in Richtung auf den Clip (3) hin in dem Gehäuse angeordnet ist;
dadurch gekennzeichnet,
daß das Gehäuse (2) ferner eine Führungseinrichtung (6) zum Führen der Nadel (1) während ihrer Bewegung in Richtung auf den Clip (3) aufweist, und daß die Betätigungseinrichtung einen mit dem Kopf der Nadel (1) verbundenen Druckknopf (4) aufweist, und daß die Führungseinrichtung eine Gewebeklemmvorrichtung (6) aufweist, die elastisch mit dem Druckknopf (4) gekoppelt ist und eine Bohrung aufweist, in die der Schaft der Nadel (1) hineinragt, wobei die elektrische Schaltung (21) zur Ermittlung durch ein elektromagnetisches Abfragefeld vorgesehen ist.
2. Erkennungsmarke nach Anspruch 1, dadurch gekennzeichnet, daß die Verriegelungseinrichtung (9;45) mindestens eine Rasteinrichtung (9;45) aufweist, welche, wenn die Nadel (1) sich zu dem Clip (3) bewegt hat, hinter eine Schulter (8) der Betätigungseinrichtung greift und diese verriegelt.

3. Erkennungsmarke nach Anspruch 2, dadurch gekennzeichnet, daß die mindestens eine Rasteinrichtung (9;45) durch eine magnetische Einrichtung verriegelbar ist.

4. Erkennungsmarke nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die elektrische Schaltung (21) einen aktiven Bereich aufweist, der im Betrieb von einer Versorgungsspannung erregt wird und in der Lage ist, ein Alarmsignal zu erzeugen.

5. Erkennungsmarke nach einem der Ansprüche 1-4, dadurch gekennzeichnet, daß der Druckknopf (4) hohl und in der Lage ist, zwischen zwei in den Druckknopf (4) hineinragenden Kontaktfedern (10,11;40,41) mindestens eine Batterie (12) aufzunehmen.

6. Erkennungsmarke nach Anspruch 5, dadurch gekennzeichnet, daß die Kontaktfedern (10,11;40,41) in der Verriegelungsposition der Verriegelungseinrichtung (9;45) durch Klinken, die Bestandteil der Verriegelungseinrichtung (9;45) sind, mit der elektrischen Schaltung (21) elektrisch verbunden sind.

7. Erkennungsmarke nach Anspruch 6, dadurch gekennzeichnet, daß der Nadelkopf in der Verriegelungsposition der Nadel (1) gegen die mindestens eine Batterie (12) drückt und diese von mindestens einer der Kontaktfedern (10,11;40,41) frei hält.

8. Erkennungsmarke nach Anspruch 7, dadurch gekennzeichnet, daß die eine Kontaktfeder (10,11;40,41) über eine zwischen dem Druckknopf (4) und der Gewebeklammer (6) angeordnete Druckfeder (5) mit einer auf der Gewebeklammer vorgesehenen Kontakteleiste (13) verbunden ist.

9. Erkennungsmarke nach Anspruch 8, gekennzeichnet durch eine mit einer Befestigungsschnur (14,15) versehene Zusatzeinrichtung (22), die zwischen der Gewebeklemmvorrichtung (6) und dem Clip (3) angeordnet werden kann und eine Bohrung (26) zur Aufnahme der Nadel (1) aufweist, wobei die Zusatzeinrichtung (22) mit einem Ende der Schnur (14,15) fest verbunden ist und mit dem anderen Ende der Schnur lösbar verbunden ist, die Schnur einen in einem flexiblen rohrförmigen Teil (14) untergebrachten Kern (15) aufweist, der Kern (15) an einem Ende der Schnur in einen zentralen Raum (23) in der Zusatzeinrichtung (22) hineinragt und an dem anderen Ende der Schnur fest mit dem rohrförmigen Teil verbunden ist, das in den zentralen Raum der

- Zusatzeinrichtung hineinragende End der Schnur mit einer Metallverdickung (19) versehen ist, welche von einer Feder (16) in Richtung auf die Nadel (1) vorgespannt ist, jedoch normalerweise nicht in der Lage ist, die Nadel (1) zu erreichen, wobei die Feder (16) mit einer Kontaktleiste (17) in Kontakt ist, die einen der auf der Gewebeklemmvorrichtung (6) vorgesehenen Kontaktleisten (13) entsprechenden Bereich aufweist.
10. Erkennungsmerkmale nach Anspruch 5, dadurch gekennzeichnet, daß die Kontaktfedern (10, 11; 40, 41) mit der elektrischen Schaltung (21) elektrisch verbunden sind, daß der Kopf der Nadel (1) mit einem Pol der mindestens einen Batterie (12) in Kontakt ist, und daß in dem Hohlraum (7) zur Aufnahme der Nadel (1) in dem Clip (3) eine zusätzliche Kontaktfeder (47) vorgesehen ist, wobei die Kontaktfeder (47) in verriegeltem Zustand mit der Nadel (1) in Kontakt und mit der elektrischen Schaltung (21) elektrisch verbunden ist, wobei die elektrische Schaltung derart ausgebildet ist, daß ein Alarmsignal erzeugt wird, wenn der Kontakt zwischen der Nadel (1) und der zusätzlichen Kontaktfeder (47) unterbrochen wird.
11. Erkennungsmerkmale nach Anspruch 10, gekennzeichnet durch eine mit einer Befestigungsschnur (14, 15) versehene Zusatzeinrichtung (22), wobei die Zusatzeinrichtung (22) einen Hohlraum (23) zur Aufnahme der Spitze der Nadel (1) aufweist und derart ausgestaltet ist, daß sie zwischen die Gewebeklemmvorrichtung (6) und den Clip (3) eingesetzt werden kann, wobei die Schnur (14, 15) einen Leiter (15) aufweist, dessen eines Ende eine in den Hohlraum (23) der Zusatzeinrichtung hineinragende Kontaktlippe (19) aufweist und dessen anderes Ende eine Kontaktlippe (25) aufweist, welche in die Zusatzeinrichtung (22) eingehakt werden kann und im verriegelten Zustand die zusätzliche Kontaktfeder (17) kontaktiert.
12. Erkennungsmerkmale nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die elektrische Schaltung (21) einen Codegenerator zur Erzeugung eines kodierten Signals aufweist.
13. Erkennungsmerkmale nach einem der vorhergehenden Ansprüche 5-13, dadurch gekennzeichnet, daß die elektrische Schaltung (21) einen Sendebereich aufweist, der in der Lage ist, ein radiofrequentes Alarmsignal zu senden.
14. Erkennungsmerkmale nach einem der vorhergehenden Ansprüche, gekennzeichnet durch einen in dem Gehäuse (2) angeordneten akustischen

Alarmgenerator.

15. Erkennungsmerkmale nach Anspruch 14, dadurch gekennzeichnet, daß das Gehäuse (2) in der Nähe des akustischen Alarmgenerators (43) mit Öffnungen (35) versehen ist.
16. Erkennungsmerkmale nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Gehäuse (2) kegelförmig ist, daß in dem kegelförmigen oberen Teil der konischen Form ein Druckknopf (4) angeordnet ist, welcher Druckknopf (4) in gedrückter Position vollständig in das Gehäuse versenkt ist, und daß das freie Ende eines fixierten Clips (3) der Basis der konischen Form gegenüber angeordnet ist, wobei der Clip (3) durch ein verbreitertes Zwischenstück (34) mit einem Randbereich der konischen Form verbunden ist.
17. Erkennungsmerkmale nach Anspruch 16, dadurch gekennzeichnet, daß das Zwischenstück (35) einen akustischen Alarmgenerator (34) aufnehmen kann.

Revendications

1. Etiquette de détection pour un système anti-vol à l'étalage, comprenant un boîtier (2) recevant un circuit électrique (21), une aiguille (1) au moyen de laquelle l'étiquette de détection peut être fixée à un article qui doit être protégé et un moyen de verrouillage (9, 45) pour verrouiller l'aiguille (1), dans lequel le boîtier (2) comprend une pince fixe (3) qui associée au reste du boîtier (2) entoure un espace libre de type fente et comporte une cavité (7) pour recevoir la pointe de l'aiguille (1) et l'aiguille (1) est placée à l'intérieur du boîtier en même temps qu'un moyen d'actionnement pour déplacer l'aiguille (1) vers la pince (3); caractérisée en ce que le boîtier (2) comprend de plus un moyen de guidage (6) pour guider l'aiguille (1) pendant son déplacement vers la pince (3) et en ce que le moyen d'actionnement comprend un bouton poussoir (4) connecté à la tête de l'aiguille (1) et en ce que le moyen de guidage comporte un dispositif de serrage de tissu (6) couplé de manière élastique au bouton poussoir (4) et ayant un alésage (20) dans celui-ci, dans lequel le corps de l'aiguille (1) s'étend, le circuit électrique (21) étant destiné à la détection par un champ d'interrogation électromagnétique.
2. Etiquette de détection selon la revendication 1, caractérisée en ce que le moyen de verrouillage (9, 45) comprend au moins un cliquet (9, 45) qui, si l'aiguille (1) était déplacée vers la pince (3),

- s'encliquète derrière un épaulement (8) du moyen d'actionnement et verrouille celui-ci.
3. Etiquette de détection selon la revendication 2, caractérisée en ce que ledit au moins un cliquet (9, 45) est déverrouillable par un moyen magnétique. 5
 4. Etiquette de détection selon l'une quelconque des revendications précédentes, caractérisée en ce que le circuit électrique (21) comprend une partie active qui, en fonctionnement, est alimentée par une tension d'alimentation et est capable de produire un signal d'avertissement. 10
 5. Etiquette de détection selon l'une quelconque des revendications 1 à 4, caractérisée en ce que le bouton poussoir (4) est creux et est capable de recevoir au moins une pile (12) entre deux ressorts de contact (10, 11 ; 40, 41) s'étendant dans le bouton poussoir (4). 15
 6. Etiquette de détection selon la revendication 5, caractérisée en ce que, dans la position verrouillée du moyen de verrouillage (9, 45), les ressorts de contact (10, 11 ; 40, 41) sont électriquement connectés au circuit électrique (21) par l'intermédiaire de doigts d'encliquetage formant une partie du moyen de verrouillage (9, 45). 20
 7. Etiquette de détection selon la revendication 6, caractérisée en ce que, dans la position verrouillée de l'aiguille (1), la tête de l'aiguille pousse contre la au moins une pile (12) et maintient celle-ci hors d'atteinte d'au moins un des ressorts de contact (10, 11 ; 40, 41). 25
 8. Etiquette de détection selon la revendication 7, caractérisée en ce que ledit un ressort de contact (10, 11 ; 40, 41) est connecté par l'intermédiaire d'un ressort de compression (5) placé entre le bouton poussoir (4) et le dispositif de serrage de tissu (6) avec une bande de contact (13) prévue sur ledit dispositif de serrage de tissu. 30
 9. Etiquette de détection selon la revendication 8, caractérisée par un accessoire (22) prévu avec un cordon de liaison (14, 15), lequel accessoire peut être placé entre le dispositif de serrage de tissu (6) et la pince (3) et comporte un alésage destiné à recevoir l'aiguille (1), ledit accessoire (22) étant relié de manière fixe à une extrémité du cordon (14, 15) et relié de manière détachable à l'autre extrémité de cordon, le cordon comportant une âme (15) logée dans un élément tubulaire souple (14), ladite âme (15) s'étendant à une extrémité du cordon dans un espace central (23) dans l'accessoire (22), et étant reliée à l'autre ex- 35
 - trémité du cordon de manière fixe audit élément tubulaire, l'extrémité du cordon s'étendant dans l'espace central de l'accessoire étant muni d'une surépaisseur métallique (19) sollicitée par un ressort (7) vers l'aiguille (1) mais ne pouvant normalement pas atteindre ladite aiguille (1), le ressort (16) étant en contact avec une bande de contact (17) ayant une partie correspondant à la bande de contact (13) prévue sur le dispositif de serrage de tissu (6). 40
 10. Etiquette de détection selon la revendication 5, caractérisée en ce que les ressorts à contact (14, 11 ; 40, 41) sont électriquement connectés au circuit électrique (21), en ce que la tête de l'aiguille (1) est en contact avec un pôle de ladite au moins une pile (12) et en ce que un ressort de contact supplémentaire (47) est prévu dans la cavité (7) recevant l'aiguille (1) dans la pince (3), ledit ressort de contact (47) dans la condition verrouillée étant en contact avec l'aiguille (1) et étant électriquement connecté au circuit électrique (21), ledit circuit électrique étant prévu de sorte que lorsque le contact entre l'aiguille (1) et le ressort de contact supplémentaire (47) est rompu, un signal d'avertissement soit produit. 45
 11. Etiquette de détection selon la revendication 10, caractérisée par un accessoire (22) muni d'un cordon de liaison (14, 15), ledit accessoire (22) comportant une cavité (23) dans celui-ci pour recevoir la pointe de l'aiguille (1) et étant prévu pour être inséré entre le dispositif de serrage de tissu (6) et la pince (3), ledit cordon (14, 15) comprenant un conducteur (15) ayant à une extrémité une lèvre de contact (19) s'étendant dans la cavité (23) de l'accessoire, et à l'autre extrémité une lèvre de contact (25) qui peut être accrochée dans l'accessoire (22) et, dans la condition verrouillée, établit le contact avec le ressort de contact supplémentaire (17). 50
 12. Etiquette de détection selon l'une quelconque des revendications précédentes, caractérisée en ce que le circuit électrique (21) comprend un générateur de codes pour produire un signal codé. 55
 13. Etiquette de détection selon l'une quelconque des revendications précédentes 5 à 13, caractérisée en ce que le circuit électrique (21) comprend une section d'émission capable d'émettre un signal d'avertissement radiographique.
 14. Etiquette de détection selon l'une quelconque des revendications précédentes, caractérisée par un générateur d'avertissement acoustique disposé à l'intérieur du boîtier (2).

15. Etiquette de détection selon la revendication 14, caractérisée en ce que le boîtier (2) est prévu avec des ouvertures (35) au voisinage du générateur d'avertissement acoustique (43).

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16. Etiquette de détection selon l'une quelconque des revendications précédentes, caractérisée en ce que le boîtier (2) est en forme de cône tronqué, en ce qu'un bouton poussoir (4) est placé dans le haut tronqué de la forme conique, lequel bouton poussoir (4), dans la position enfoncée, est totalement à l'intérieur du boîtier, et en ce que l'extrémité libre d'une pince fixe (3) est placée en regard de la base de la forme conique, laquelle pince (3) est raccordée à une partie de bord de la forme conique par une pièce intermédiaire élargie (34).

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17. Etiquette de détection selon la revendication 16, caractérisée en ce que la pièce intermédiaire (35) peut recevoir un générateur d'avertissement acoustique (34).

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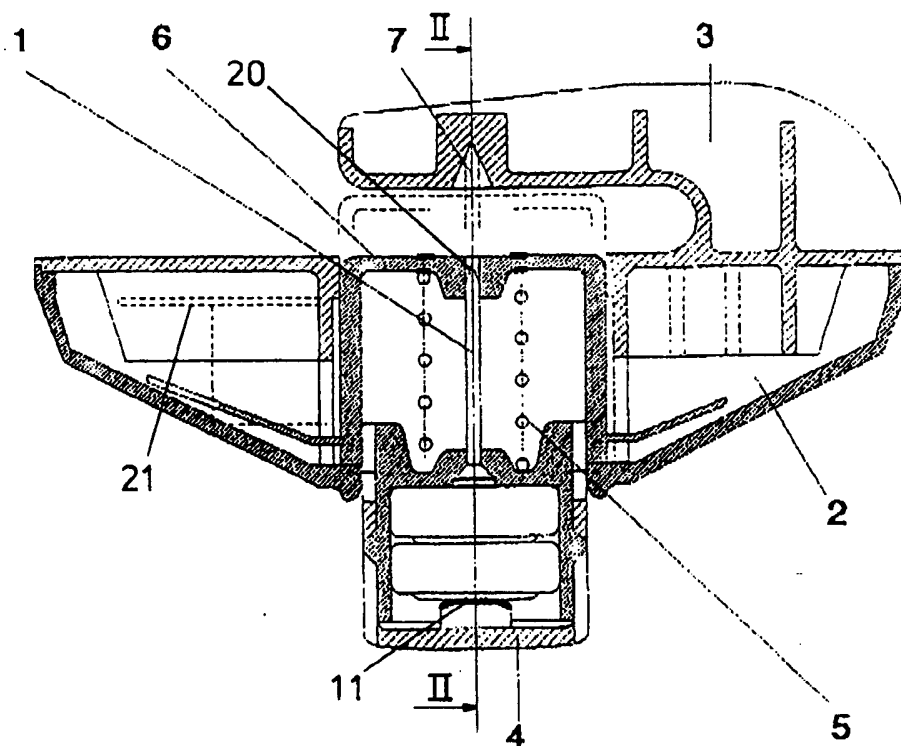


FIG.1

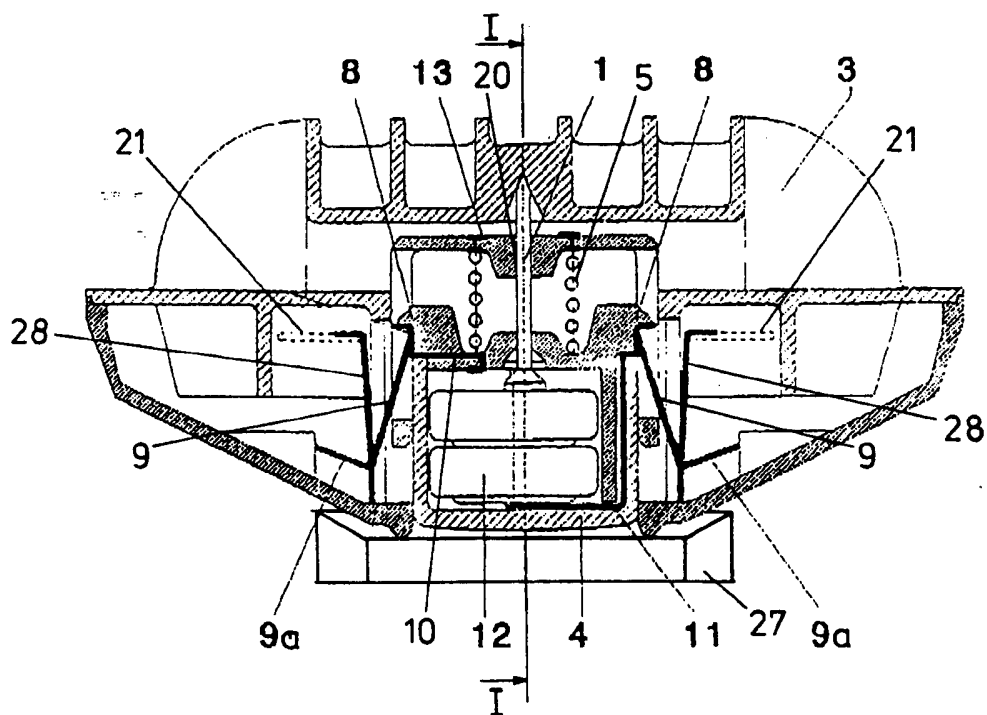


FIG.2

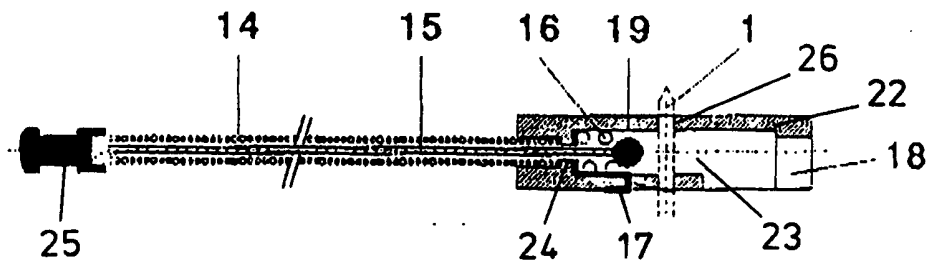


FIG. 3

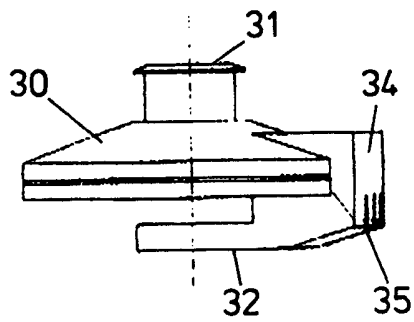


FIG. 4

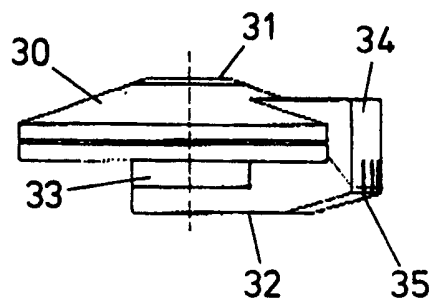


FIG. 5

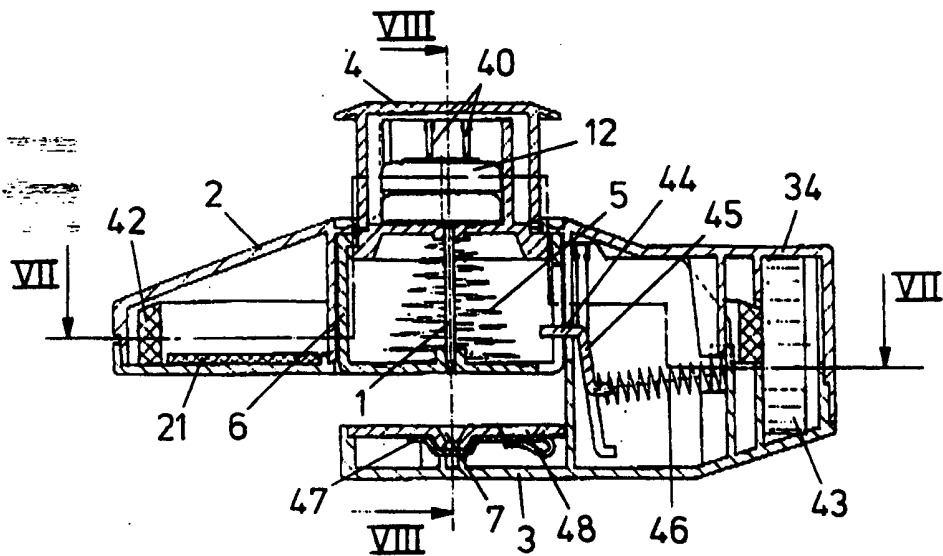


FIG. 6

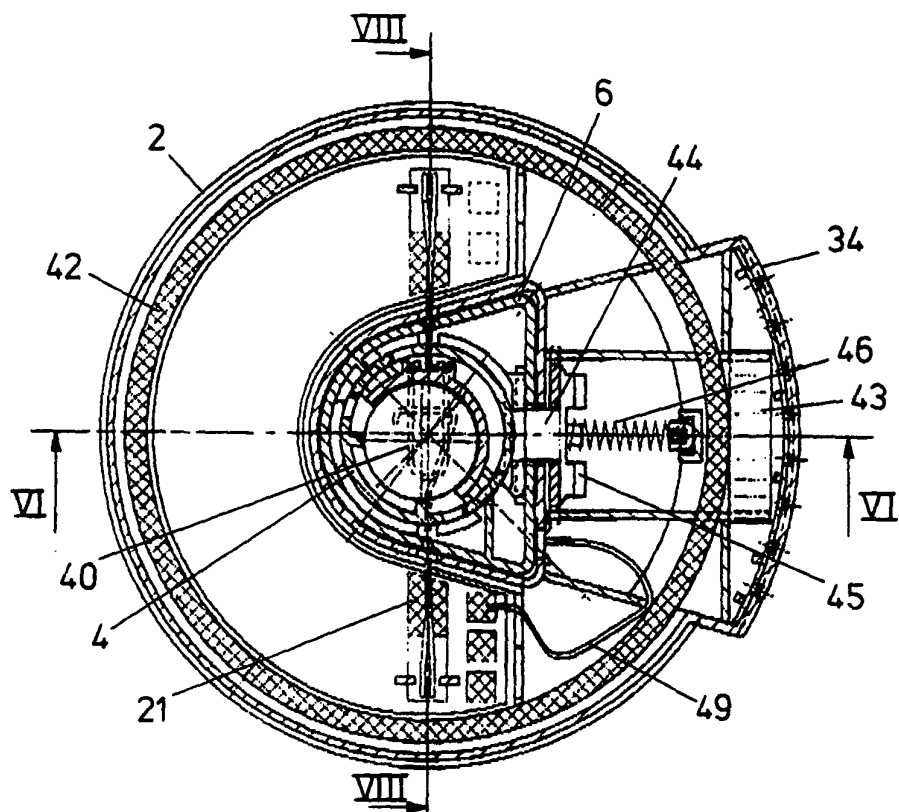


FIG. 7

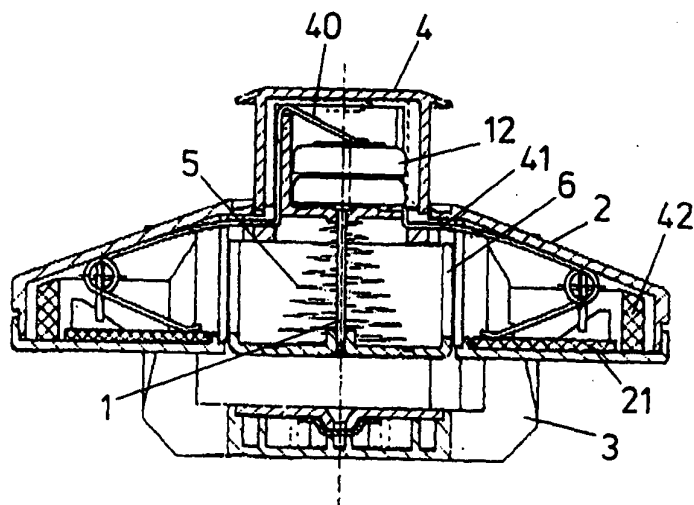


FIG. 8

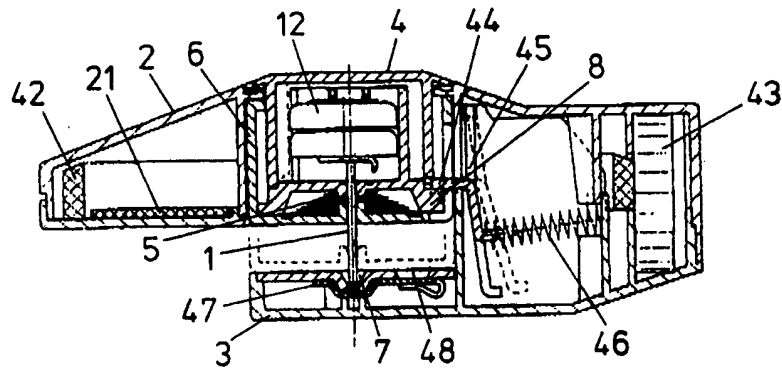


FIG. 9

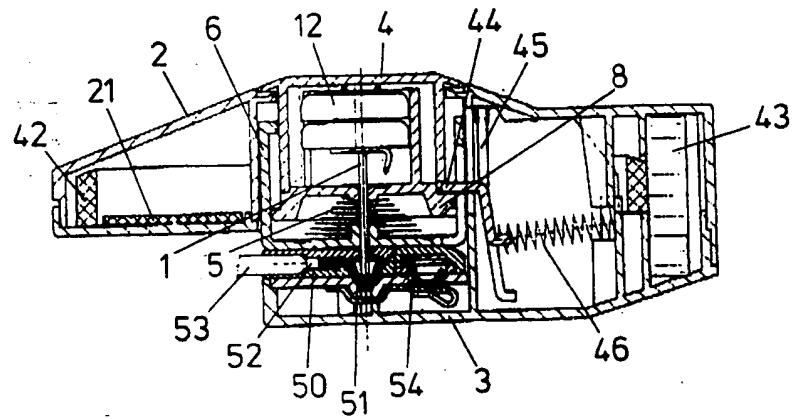


FIG. 10